

**IN THE CLAIMS**

Please make the following claim substitutions:

- 1 1. (Currently amended) A method for assigning codes in a CDMA wireless  
2 communication system, wherein said codes are spreading codes, and in which a  
3 plurality of wireless terminals communicate via a plurality of channels, said  
4 method comprising the steps of:  
5       estimating propagation characteristics of said plurality of channels; and  
6       assigning spreading codes to said plurality of wireless terminals based on  
7 said estimated propagation characteristics of said channels.
- 1 2. (Previously presented) The method of claim 1 wherein said step of assigning  
2 spreading codes comprises the steps of:  
3       choosing a target wireless terminal; and  
4       assigning a spreading code to said target wireless terminal.
- 1 3. (Currently amended) The method of claim 2 wherein said step of assigning a  
2 spreading code to a target wireless terminal comprises the step of:  
3       performing a random code search to obtain an improved code for said  
4 target wireless terminal, wherein said improved code ~~which~~ is an improvement  
5 over a current code of said target wireless terminal.
- 1 4. (Currently amended) The method of claim 3 wherein said step of performing a  
2 random code search comprises the step of randomly searching available codes  
3 until an said improved code is found.
- 1 5. (Original) The method of claim 3 wherein said step of performing a random  
2 code search comprises the step of randomly searching a subset of available  
3 codes for the best code in said subset.
- 1 6. (Currently amended) The method of claim 3 further comprising the step of:  
2       performing a gradient search of codes in the a signal space area  
3 surrounding said improved code.

1 7. (Original) The method of claim 3 further comprising the step of:  
2 performing a gradient search of transmission delays for said improved  
3 code.

1 8. (Currently amended) The method of claim 3 further comprising the steps of:  
2 performing a gradient search of codes in the a signal space area  
3 surrounding said improved code; and  
4 performing a gradient search of transmission delays for said improved  
5 code.

1 9. (Original) The method of claim 1 further comprising the steps of:  
2 maintaining a processing set of said plurality of wireless terminals;  
3 individually assigning codes to said wireless terminals in said processing  
4 set; and  
5 adding a wireless terminal to said processing set when said step of  
6 individually assigning codes to said wireless terminals in said processing set has  
7 converged and repeating said step of individually assigning codes.

1 10. (Original) The method of claim 1 further comprising the step of:  
2 transmitting said codes to said plurality of wireless terminals.

1 11. (Currently amended) A method for assigning a spreading code to a wireless  
2 terminal in a CDMA wireless communication system, wherein said code is a  
3 spreading code, comprising the steps of:

4 estimating propagation characteristics of a communication channel of said  
5 wireless terminal; and

6 assigning a spreading code to said wireless terminal based on said  
7 estimated propagation characteristics of said communication channel.

1 12. (Previously presented) The method of claim 11 wherein said step of  
2 assigning a spreading code further comprises the step of:

3 performing a random code search for an improved code relative to a  
4 current code assigned to said wireless terminal.

1 13. (Currently amended) The method of claim 12 wherein said step of  
2 performing a random code search comprises the step of:

3 searching available codes for ~~an~~ said improved code.

1 14. (Original) The method of claim 12 wherein said step of performing a random  
2 code search comprises the step of:

3 searching a subset of available codes for the best code in said subset.

1 15. (Currently amended) The method of claim 12 further comprising the step of:

2 performing a gradient search of codes in ~~the~~ a signal space area  
3 surrounding said improved code.

1 16. (Original) The method of claim 12 further comprising the step of:

2 performing a gradient search of transmission delays for said improved  
3 code.

1 17. (Currently amended) The method of claim 12 further comprising the steps  
2 of:

3 performing a gradient search of codes in ~~the~~ a signal space area  
4 surrounding said improved code; and

5 performing a gradient search of transmission delays for said improved  
6 code.

1 18. (Currently amended) A method for use in a CDMA wireless communication  
2 system comprising the steps of:

3 receiving channel propagation characteristics of a plurality of wireless  
4 channels;

5 wherein said channel propagation characteristics comprise the direction of  
6 arrival of a path of signal transmission and the propagation delays experienced  
7 by said signal transmission; and

8 assigning codes to a plurality of wireless terminals based on said received  
9 channel propagation characteristics, wherein said codes are spreading codes.

1 19. (Currently amended) The method of claim 18 wherein said step of assigning  
2 spreading codes comprises the steps of:

3 choosing a target wireless terminal; and  
4 assigning a said spreading code to said target wireless terminal.

1 20. (Currently amended) The method of claim 19 wherein step of assigning a  
2 said spreading code to a target wireless terminal comprises the step of:

3 performing a random code search to obtain an improved code for said  
4 target wireless terminal, wherein said improved code ~~which~~ is an improvement  
5 over a current code of said target wireless terminal.

1 21. (Currently amended) The method of claim 20 wherein said step of  
2 performing a random code search comprises the step of randomly searching  
3 available codes until an said improved code is found.

1 22. (Original) The method of claim 20 wherein said step of performing a random  
2 code search comprises the step of randomly searching a subset of available  
3 codes for the best code in said subset.

1 23. (Currently amended) The method of claim 20 further comprising the step of:  
2 performing a gradient search of codes in the a signal space area  
3 surrounding said improved code.

1 24. (Original) The method of claim 20 further comprising the step of:  
2 performing a gradient search of transmission delays for said improved  
3 code.

1 25. (Currently amended) The method of claim 20 further comprising the steps  
2 of:

3 performing a gradient search of codes in the a signal space area  
4 surrounding said improved code; and

5 performing a gradient search of transmission delays for said improved  
6 code.

1 26. (Original) The method of claim 18 further comprising the steps of:  
2 maintaining a processing set of said plurality of wireless terminals;  
3 individually assigning codes to said wireless terminals in said processing  
4 set; and  
5 adding a wireless terminal to said processing set when said step of  
6 individually assigning codes to said wireless terminals in said processing set has  
7 converged and repeating said step of individually assigning codes.

1 27. (Original) The method of claim 18 further comprising the step of:  
2 transmitting said codes to said plurality of wireless terminals.

1 28. (Currently amended) Apparatus for communicating with a plurality of  
2 wireless terminals via a plurality of channels, said apparatus comprising:  
3 a channel estimator for determining channel propagation characteristics;  
4 and  
5 a code optimizer for assigning ~~spreading~~ codes to said plurality of wireless  
6 terminals based on said channel propagation characteristics, wherein said codes  
7 are spreading codes.

1 29. (Presently presented) The apparatus of claim 28 wherein said code  
2 optimizer comprises:  
3 a memory storing computer program instructions;  
4 a processor for executing said stored computer program instructions;  
5 said computer program instructions defining the steps of:  
6 choosing a target wireless terminal; and  
7 assigning a spreading code to said target wireless terminal.

1 30. (Currently amended) The apparatus of claim 29 wherein the computer  
2 program instructions defining the step of assigning a spreading code to a target  
3 wireless terminal further define the step of:

4 performing a random code search to obtain an improved code for said  
5 target wireless terminal, wherein said improved code ~~which~~ is an improvement  
6 over a current code of said target wireless terminal.

1 31. (Currently amended) The apparatus of claim 30 wherein said computer  
2 program instructions defining the step of performing a random code search  
3 further define the step of randomly searching available codes until ~~an~~ said  
4 improved code is found.

1 32. (Original) The apparatus of claim 30 wherein said computer program  
2 instructions defining the step of performing a random code search further define  
3 the step of randomly searching a subset of available codes for the best code in  
4 said subset.

1 33. (Currently amended) The apparatus of claim 30 wherein said computer  
2 program instructions further define the step of:  
3 performing a gradient search of codes in the a signal space area  
4 surrounding said improved code.

1 34. (Original) The apparatus of claim 30 wherein said computer program  
2 instructions further define the step of:  
3 performing a gradient search of transmission delays for said improved  
4 code.

1 35. (Currently amended) The apparatus of claim 30 wherein said computer  
2 program instructions further define the steps of:  
3 performing a gradient search of codes in ~~the~~ a signal space area  
4 surrounding said improved code; and  
5 performing a gradient search of transmission delays for said improved  
6 code.

1 36. (Original) The apparatus of claim 28 wherein said computer program  
2 instructions further define the steps of:  
3 maintaining a processing set of said plurality of wireless terminals;

4 individually assigning codes to said wireless terminals in said processing  
5 set; and

6 adding one of said plurality of wireless terminals to said processing set  
7 when said step of individually assigning codes to said wireless terminals in said  
8 processing set has converged and repeating said step of individually assigning  
9 codes.

1 37. (Original) The apparatus of claim 28 wherein said computer program  
2 instructions further define the step of:

3 transmitting said codes to said plurality of wireless terminals.

1 38. (Currently amended) Apparatus for communicating with a plurality of  
2 wireless terminals via a plurality of channels, said apparatus comprising:

3 means for estimating channel propagation characteristics; and

4 means for assigning spreading codes to said plurality of wireless terminals  
5 based on said estimated channel propagation characteristics, wherein said codes  
6 are spreading codes.

1 39. (Previously presented) The apparatus of claim 38 wherein said means for  
2 assigning codes comprises:

3 means for choosing a target wireless terminal; and

4 means for assigning a spreading code to said target wireless terminal.

1 40. (Currently amended) The apparatus of claim 39 wherein said means for  
2 assigning a spreading code to a target wireless terminal comprises:

3 means for performing a random code search to obtain an improved code  
4 for said target wireless terminal, wherein said improved code ~~which~~ is an  
5 improvement over a current code of said target wireless terminal.

1 41. (Currently amended) The apparatus of claim 40 wherein said means for  
2 performing a random code search comprises means for randomly searching  
3 available codes until ~~an~~ said improved code is found.

1 42. (Original) The apparatus of claim 40 wherein said means for performing a  
2 random code search comprises means for randomly searching a subset of  
3 available codes for the best code in said subset.

1 43. (Currently amended) The apparatus of claim 40 further comprising:  
2 means for performing a gradient search of codes in the a signal space  
3 area surrounding said improved code.

1 44. (Original) The apparatus of claim 40 further comprising:  
2 means for performing a gradient search of transmission delays for said  
3 improved code.

1 45. (Currently amended) The apparatus of claim 40 further comprising:  
2 means for performing a gradient search of codes in the a signal space  
3 area surrounding said improved code; and  
4 means for performing a gradient search of transmission delays for said  
5 improved code.

1 46. (Original) The apparatus of claim 38 further comprising:  
2 means for maintaining a processing set of said plurality of wireless  
3 terminals;  
4 means for individually assigning codes to said wireless terminals in said  
5 processing set;  
6 means for adding one of said plurality of wireless terminals to said  
7 processing set when said step of individually assigning codes to said wireless  
8 terminals in said processing set has converged and repeating said step of  
9 individually assigning codes.

1 47. (Original) The apparatus of claim 38 further comprising:  
2 means for transmitting said codes to said plurality of wireless terminals.